

## EDITORIAL: AEOLIAN SAND TRANSPORT PROCESSES

IAN LIVINGSTONE\*

*School of Environmental Science, University College Northampton, Northampton NN2 7AL, UK*

This special issue arises from the Fourth International Conference on Aeolian Research (ICAR-4) which was held in Oxford, UK, in July 1998. The conference, convened by Andrew Goudie, Ian Livingstone and Stephen Stokes, was jointly sponsored by the British Geomorphological Research Group and IGCP projects 349 and 413, and attracted 120 delegates from over 20 countries. The predecessors of this meeting were held in Aarhus, Denmark (1985), Sandbjerg, Denmark (1990) and Zzyzx, CA, USA (1994).

This collection covers a very specific topic area – the processes of aeolian sand transport – within the wider scope of the papers on aeolian geomorphology which were presented at the conference. Some of the other papers have already been published in a pre-conference special issue (Livingstone, 1998): another volume of papers (Livingstone, 1999) and a volume of keynote addresses (Goudie *et al.*, 1999) are in press at the time of writing.

As with its predecessors, the interest at this conference in the processes of aeolian sand transport was great and is reflected in the quality of the papers presented here. The papers represent a healthy mix of theoretical modelling, wind tunnel simulation and field experiment. Ann Rice and colleagues provide a model for the prediction of wind erosion rates based on the impact energy of saltating grains. Graeme Butterfield continues to provide results from his wind tunnel, here using an optical sensor to investigate sand transport fluxes close to the bed. He reports distinct zones of flux activity. Keld Rasmussen and Michael Sørensen describe a field experiment to measure mass fluxes and they consider prediction using quasi-instantaneous wind speed. Jasem Al-Awadhi and Brian Willetts report a wind tunnel experiment concerning sand deposition induced by roughness elements. Ian Walker describes a field experiment to measure wind speeds and sediment flux on the lee slope of a reversing dune. Dale Gillette and Weinan Chen use data about particle size distributions of the saltating load to infer that sand blasting is producing a suspension load. Tezz Niemeyer and colleagues, estimating vertical flux values at Owens Lake using sunphotometry, report that calibrating against more conventional measures gives good results.

Papers on aeolian landform development, on the nature of aeolian sediments, on dust entrainment, transport and deposition, and on palaeoenvironmental inference using aeolian landforms and sediments are published in the other special issues associated with the conference. This set demonstrates that interest in the fundamental processes associated with grain entrainment, transport and deposition by the wind is as strong as ever, and the quality and volume of the output from the conference underlines the general vitality of aeolian geomorphology, both in the UK and elsewhere.

### REFERENCES

- Goudie, A. S., Livingstone, I. and Stokes, S. (Eds) 1999. *Aeolian Processes, Landforms and Sediments*, Wiley, Chichester, in press.  
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\* Correspondence to: Dr I. Livingstone, School of Environmental Science, University College Northampton, Northampton, NN2 7AL, UK. Email: [ian.livingstone@nene.ac.uk](mailto:ian.livingstone@nene.ac.uk)